

I-35E Managed Lanes Extension Study

Concept Analysis

Objective	Measure	No Build	MnPASS With a Gap (Discontinuous) Option	MnPASS Without a Gap (Continuous) Option	MnPASS on Shoulder (Priced Dynamic Shoulder) Option
Criterion 1: Reduce Congestion					
1.1 Increase person throughput	Change in 2030 Total Person Throughput vs. No-Build to Concept <i>(average of 3 screen lines)</i>	AM: 7500 person throughput PM: 7700 person throughput	<div></div> AM: 7.5% PM: 6.1%	<div></div> AM: 0.7% PM: 2.1%	<div></div> AM: 11.0% PM: 7.2%
1.2 Increase vehicle throughput (AM/PM peak hour)	Change in 2030 Total Vehicles from No-Build to Concept <i>(average of 3 screen lines)</i>	AM: 6200 vehicle throughput PM: 5900 vehicle throughput	<div></div> AM: 6.3% PM: 5.8%	<div></div> AM: -2.9% PM: -0.6%	<div></div> AM: 9.1% PM: 6.6%
1.3 Improve corridor travel time (time general purpose lanes)	Change in 2030 Peak Hour General Purpose travel times from No-Build to Concept <i>(Little Canada Rd to CR 96)</i>	n/a	<div></div> AM: -1.5 Min PM: -0.2 Min	<div></div> AM: 0.5Min PM: 0.0 Min	<div></div> AM: -2.2 Min PM: -0.6 Min
1.4 Improve corridor travel time (time reduction in managed compared to No Build)	Change in 2030 Peak Hour Managed Lane travel times from No-Build to Concept <i>(Little Canada Rd to CR 96)</i>	n/a	<div></div> AM: -3.4 Min (-32%) PM: -2.5 Min (-26%)	<div></div> AM: -3.2 Min (-34%) PM: -4.2 Min (-39%)	<div></div> AM: -3.7 Min (-38%) PM: -4.5 Min (-41%)
1.5 Vehicle hours traveled (Peak Periods)	Change in 2030 total VHT from No-Build to Concept <i>(change in sub area)</i>	n/a	<div></div> -0.42%	<div></div> -0.06%	<div></div> -0.26%
1.6 Vehicle miles traveled	Change in 2030 Peak Period VMT from No-Build to Concept <i>(change in sub area)</i>	n/a	<div></div> 0.04%	<div></div> 0.06%	<div></div> 0.12%
1.7 Minimize congestion impacts beyond project area	Minimize impacts of weave operations exiting Managed Lane QUALITATIVE	n/a	<div></div> No meaningful degradation in level of service outside project limits	<div></div> No meaningful degradation in level of service outside project limits	<div></div> No meaningful degradation in level of service outside project limits
1.8 Provide Trip Time Advantage	Trip time savings using MnPASS lane versus GP lanes <i>(average of 3 screen lines)</i>	n/a	<div></div> AM: -2.0 Min (24%) PM: -2.3 Min (21%)	<div></div> AM: -3.7 Min (33%) PM: -3.2 Min (36%)	<div></div> AM: -2.4 Min (34%) PM: -3.1 Min (27%)
1.9 Average Speeds	Speed differential between managed lane (ML) and General Purpose (GP) lane <i>(average of 3 screen lines)</i>	AM: GP 37 mph PM: GP 43 mph	<div></div> AM: GP 39 mph ML 59 mph Differential 20 mph PM: GP 43 mph ML 61 mph Differential 18 mph	<div></div> AM: GP 38 mph ML 49 mph Differential 11 mph PM: GP 45 mph ML 50 mph Differential 5 mph	<div></div> AM: GP 41 mph ML 51 mph Differential 10 mph PM: GP 44 mph ML 53 mph Differential 9 mph
Criterion 2: Transit Advantage					
2.3 Increase in Transit Ridership/Park and Ride Use	Concepts compared to No-Build for 2030 <i>(bus time saving Little Canada Rd to CR 96)</i>	n/a	<div></div> 8%	<div></div> 13%	<div></div> 10%
2.7 Transit Operations	Qualitative assessment	n/a	<div></div> Allows for express and BRT Service, bus shoulder lanes exist for BRT service. Transit stop at County Road E minimizes use/benefit of MnPASS lane for transit	<div></div> Allows for express and BRT Service, bus shoulder lanes exist for BRT service. Transit stop at County Road E minimizes use/benefit of MnPASS lane for transit	<div></div> Allows for express and BRT Service, bus shoulder lanes exist for BRT service. Transit stop at County Road E minimizes use/benefit of MnPASS lane for transit

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Criterion 3: Systems Operations Management					
3.1 Incident Management	Qualitative assessment	<div></div> Full left and right shoulders available for incidents. FIRST and MSP patrols for rapid response. Cameras and message signs for detection and management of incidents	<div></div> Full left and right shoulders available for incidents. FIRST and MSP patrols for rapid response. Cameras and message signs for detection and management of incidents	<div></div> Full left and right shoulders available for incidents. FIRST and MSP patrols for rapid response. Cameras and message signs for detection and management of incidents	<div></div> Left shoulder unavailable for incidents when PDSL is open. FIRST/MSP coverage for rapid response. Cameras and CMS for detection & management of incidents
3.2 Maintenance	Qualitative assessment	<div></div> Full left shoulder and right shoulder/ditch for snow storage. Fewer lanes to maintain	<div></div> Full left shoulder and right shoulder/ditch for snow storage.	<div></div> Full left shoulder and right shoulder/ditch for snow storage.	<div></div> Lack of snow storage could force closure of PDSL during events.
3.3 Enforcement	Qualitative assessment	n/a	<div></div> Left shoulder available for enforcement stops within 35E/694 Commons. Increased opportunity for violators in MnPASS lane downstream of gap segment	<div></div> Left shoulder available for violation monitoring enforcement stops within 35E/694 commons. Continuity of MnPASS lane minimizes confusion for drivers.	<div></div> No left shoulder available for enforcement stops
Criterion 4: Safety					
4.1 Crash Reduction	Qualitative assessment	<div></div> Added crashes vs. build options because more traffic growth handled off the interstate on local networks	<div></div> A reduction in overall corridor congestion is expected which will reduce overall crashes	<div></div> A reduction in overall corridor congestion is expected which will reduce overall crashes	<div></div> A reduction in overall corridor congestion is expected which will reduce overall crashes
4.2 Maintain Consistency with driver expectations	Qualitative assessment	<div></div> Current design meets driver expectations	<div></div> No Design Exceptions to MnDOT and FHWA Design Standards. Some driver confusion possible with gap section	<div></div> No Design exceptions. Continuous MnPASS lane with no lane transitions would meet driver expectations for lane continuity	<div></div> Exceptions to MnDOT and FHWA Design Standards for shoulder and lane widths. Stopping sight distance limitation in 35E/694 commons requires reduced speed limits
4.3 Constructability while Maintaining Existing Traffic	Qualitative assessment	n/a	<div></div> Option can be built while maintaining existing number of traffic lanes	<div></div> Option can be built while maintaining existing number of traffic lanes	<div></div> Option can be built while maintaining existing number of traffic lanes
4.4 MnPASS Lane Continuity	(YES /NO)	n/a	<div></div> No continuity of MnPASS operations through 35E/694 Commons, however users would maintain lane continuity to connect to second MnPASS segment	<div></div> Continuity of MnPASS operation and lane throughout corridor	<div></div> MnPASS operational continuity exists, but users would need to transition in and out of the shoulder lane
Criterion 5: Cost					
5.1 Capital Costs	Planning level cost estimate	\$0	\$10.7 M	\$11.3 M	\$24.0 M
5.2 O & M Costs	Qualitative assessment compared to no build	n/a	<div></div> Lowest O& M Costs of three Concepts. Expansion of pavement and the addition of tolling infrastructure has long term O & M Costs	<div></div> Slightly higher O and M costs then <i>With a Gap</i> Option due to additional Tolling Infrastructure	<div></div> Additional lane to maintain between Little Canada Rd and CR E. Additional ATM infrastructure for Managing System. Similar Tolling infrastructure O & M to the <i>Without a Gap</i> Option
Criterion 6: Legal and Public Considerations					
6.1 Legal Considerations	Qualitative assessment	<div></div> None	<div></div> Permitted by State and Federal Law	<div></div> Requires Federal approval under Value Pricing Pilot Program. MN State law allows conversion of lane but MnDOT may decide to seek specific legislature support	<div></div> Permitted by State and Federal Law
6.2 Community Dialogue Results	Qualitative assessment	n/a	TBD	TBD	TBD
Criterion 7: Benefit / Cost					
6.1 Benefit Cost		n/a	TBD	TBD	TBD

Screenline Locations

